

**Public Utilities Commission of the  
State of California**

**General Order No. 167**

**Enforcement of Maintenance and  
Operation Standards  
for Electric Generating Facilities**

**Effective December 20, 2004.  
(D.04-12-049 in R.02-11-039)**

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## **1.0 PURPOSE**

The purpose of this General Order is to implement and enforce standards for the maintenance and operation of electric generating facilities and power plants so as to maintain and protect the public health and safety of California residents and businesses, to ensure that electric generating facilities are effectively and appropriately maintained and efficiently operated, and to ensure electrical service reliability and adequacy. The General Order provides a continuing method to implement and enforce General Duty Standards for Operations and Maintenance, Generator Maintenance Standards (Maintenance Standards), Generator Operation Standards (Operation Standards), and any other standard adopted pursuant to Public Utilities Code § 761.3 (Chapter 19 of the Second Extraordinary Session of 2001-02 (SBX2 39, Burton *et al.*). The General Order also provides a means to enforce the protocols for the scheduling of power plant outages of the California Independent System Operator. The General Order is based on the authority vested in the California Public Utilities Commission by the California Constitution; California statutes and court decisions; prior Commission decisions and orders; and federal law including, but not limited to, the Federal Power Act, 16 U.S.C. § 791 *et seq.*, and section 714 of the Energy Policy Act of 1992, 16 U.S.C. § 824(g). Nothing in this general order diminishes, alters, or reduces the Commission's existing authority to inspect power plants and to request data from those power plants to assure continued maintenance and operation of the facilities in order to support public safety and the reliability of California's electricity supply.

## **2.0 DEFINITIONS/ACRONYMS**

- 2.1 “Active Service” means the status of an electric generating unit that is interconnected, is capable of operating in parallel with the electricity grid, and has achieved commercial operation.
- 2.2 “California Independent System Operator” or “ISO” is that nonprofit public benefit corporation authorized under Public Utilities Code § 345 *et seq.* to operate California’s wholesale power grid. For purpose of information-sharing under this General Order, ISO is considered to be a governmental agency.
- 2.3 “Commission” means the California Public Utilities Commission.
- 2.4 “Committee” means the California Electricity Generation Facilities Standards Committee, formed pursuant to Public Utilities Code § 761.3(b).
- 2.5 “Consumer Protection and Safety Division” or “CPSD” means that division of the Commission, or any successor entity, designated by the Commission to enforce this General Order.

- 2.6 “Exigent circumstance” means any condition related to the operation and maintenance of a Generating Asset that may result in imminent danger to public health or safety, including electrical service reliability or adequacy, or to persons in the proximity of a Generating Asset.
- 2.7 “General Duty Standards” means the Standards 1 through 3 and 5 & 6 from the General Duty Standards for Operation and Maintenance, adopted by the Committee on May 2, 2003, and revised on June 3, 2003, and set forth as Attachment A to Committee Resolution No. 3, which was filed with the Commission on June 6, 2003. This initial set of General Duty Standards is set forth in Appendix A to this General Order. “General Duty Standards” also includes any subsequent amendments or revisions to those standards
- 2.8 “Generating Asset” means any device owned by an electrical corporation (as that term is defined in Public Utilities Code § 218) or located in the State of California used for the generation of electric energy. To be a Generating Asset, the device must have a metered output, or an administratively defined group of generating devices that may or may not have individual metered outputs, but are aggregated for performance measurement. *However*, for the purposes of this General Order, a Generating Asset does not include:
- 2.8.1 A nuclear powered generating facility that is federally regulated and subject to standards developed by the Nuclear Regulatory Commission, and whose owner or operator participates as a member of the Institute of Nuclear Power Operations, *provided* that the owner or operator of such a facility shall comply with the reporting requirements of Public Utilities Code § 761.3(d).
- 2.8.2 A qualifying small power production facility or a qualifying cogeneration facility within the meaning of sections 201 and 210 of Title 11 of the federal Public Utility Regulatory Policies Act of 1978 (16 U.S.C. §§ 796(17), 796(18) & 824a-3) and the regulations adopted pursuant to those sections by the Federal Energy Regulatory Commission (18 C.F.R. §§ 292.101 to –602, inclusive), *provided* that an electrical corporation that has a contract with a qualifying small power production facility, or a qualifying cogeneration facility, with a name plate rating of 10 megawatts or greater, shall comply with the reporting requirements of Public Utilities Code § 761.3(d)(2)(B).
- 2.8.3 A generation unit installed, operated, and maintained at a customer site, exclusively to serve that customer’s load.

- 2.8.4 A facility owned by a local publicly owned electric utility as defined in Public Utility Code § 9604(d).
- 2.8.5 A facility at a public agency that is used to generate electricity incidental to the provision of water or wastewater treatment.
- 2.8.6 A facility owned by a city and county operating as a public utility, furnishing electric service as provided in Public Utility Code § 10001.
- 2.9 “Generating Asset Owner” means any person or entity owning, controlling, operating, or managing a Generating Asset. “Generating Asset Owner” includes, but is not limited to, an electrical corporation (as that term is defined in Public Utilities Code § 218). “Generating Asset Owner” does not include any governmental agency described in Public Utilities Code § 761.3(h). Although for the various purposes of this General Order more than one person or entity may meet the preceding definition, this section is not intended to require duplicate or redundant filings or notifications for any particular Generating Asset.
- 2.10 “Generating Availability Data System” or “GADS” means that data base system maintained by the North American Electric Reliability Council (NERC) which collects, records, and retrieves operating information for improving the performance of electric generating equipment.
- 2.11 “Generator Logbook Standards (Hydroelectric Energy)” means the “Logbook Standards for Hydroelectric Generating Facilities,” adopted by the Committee on April 7, 2004, and filed with the Commission on April 14, 2004. The Generator Logbook Standards (Hydroelectric Energy) are set forth as Appendix C to this General Order. “Generator Logbook Standards (Hydroelectric Energy)” also includes any subsequent amendments or revisions to those standards.
- 2.12 “Generator Logbook Standards (Thermal Energy)” means the “Electricity Generating Facility Logbook Standards for Thermal Power Plants,” adopted by the Committee on April 1, 2003, and filed with the Commission on April 2, 2003. The Generator Logbook Standards (Thermal Energy) are set forth as Appendix B to this General Order. “Generator Logbook Standards (Thermal Energy)” also includes any subsequent amendments or revisions to those standards.
- 2.13 “Generator Maintenance Standards” means the Maintenance Standards in the “Maintenance Standards for Generators with Suggested Implementation and Enforcement Model” adopted by the Committee on May 2, 2003, and filed with the Commission on May 16, 2003. The Generator Maintenance Standards are set forth as Appendix D to this

General Order. “Generator Maintenance Standards” also includes any subsequent amendments or revisions to those standards.

- 2.14 “Generator Operation Standards” means the Operation Standards in the “Operations Standards for Generating Asset Owners” adopted by the Committee on October 27, 2004, and filed with the Commission on November 1, 2004. The Generator Operation Standards are set forth as Appendix E to this General Order. “Generator Operation Standards” also includes any subsequent amendments or revisions to those standards.
- 2.15 “Initial Certification” means the first document filed by a Generating Asset Owner for a specific Generating Asset certifying that the Generating Asset Owner has adopted and is implementing a Maintenance Plan for that Generating Asset as required by Section 7.0 of this General Order, or an Operation Plan for that Generating Asset as required by Section 8.0.
- 2.16 “NERC” means the North American Electric Reliability Council or any successor thereto.
- 2.17 “Notify CPSD,” “file with the Commission,” “filing,” or “file” means (unless otherwise indicated) to send a written communication by the U.S. Mail or a more expeditious express mail service to the Consumer Protection and Safety Division, Electric Generation Performance Program, at the address specified in subsection 15.2 of this General Order. These written communications are not filed with the Commission’s Docket Office.
- 2.18 “Outage Coordination Protocol” means that document set forth as sheets 509-535 (effective October 13, 2000) in the ISO tariff to coordinate schedules for maintenance, repair and construction of generating units, sections of the ISO controlled grid, and interconnections, as well as any subsequent amendments to the document.
- 2.19 “Scheduling Logging for the ISO of California” or “SLIC” is a web-based system application and procedure, and any successor system, used by the ISO and external clients for scheduling of generator outages.
- 2.20 “Standards” is a collective term including all the individual standards enforced pursuant to this General Order: General Duty Standards, Generating Logbook Standards (Hydroelectric Energy), Generating Logbook Standards (Thermal Energy), Generator Maintenance Standards, Generator Operation Standards, and the Outage Coordination Protocol of the ISO, as set forth in subsection 9.1 of this General Order.
- 2.21 “Thermal Energy” is the production of electricity from heat generated from combustion of fuels, recovery of heat from discharges from a turbine

or other device powered by the combustion of fuels, and geothermal energy.

### **3.0 REQUIRED COMPLIANCE**

- 3.1 Basic Requirement. Unless exempted below, all Generating Asset Owners shall comply with all Standards and all sections of this General Order for each Generating Asset. A Generating Asset's eligibility for an exemption shall be determined by summing the nameplate rating generating capacities of all units at that plant or location.
- 3.2 Small Facilities. Generating Assets smaller than one megawatt are currently exempt from enforcement of the Standards pursuant to this General Order. Notwithstanding this exemption, Generating Asset Owners of such Generating Assets shall cooperate in any Commission or CPSD investigation, inspection, or audit by permitting access to those Generating Assets and by providing information (orally or written) or documents about the maintenance and operation of those Generating Assets if so requested by the Commission or CPSD.
- 3.3 Medium Facilities. Generating Assets of one megawatt or larger but smaller than 50 megawatts are exempt from Generator Logbook Standards (Hydroelectric Energy), Generator Logbook Standards (Thermal Energy), Generator Maintenance Standards, and Generator Operation Standards. Accordingly, such Generating Assets are subject to all requirements of this General Order except for sections 5, 6, 7, and 8. Notwithstanding these exemptions, such facilities must follow prudent practices as required by sections 5.2, 6.2, 7.4 and 8.4.
- 3.4 Switching Centers. Switching centers controlling 50 megawatts or more of hydroelectric power must keep logbooks concerning switching center operations for all remotely controlled Generating Assets of one megawatt or larger, as provided in section 6.2.
- 3.5 Hydroelectric Facilities. Hydroelectric facilities licensed by the Federal Energy Regulatory Commission are exempt from Sections 7.0, 8.0, 9.0, 10.3, 10.4 and 15.1.

### **4.0 GENERAL DUTY STANDARDS**

- 4.1 The General Duty Standards are set forth in Appendix A to this General Order, as modified by any subsequent amendments or revisions to those standards.

- 4.2 Unless exempted, all Generating Asset Owners shall operate their Generating Assets in compliance with the General Duty Standards, until such time as the Commission implements and enforces detailed operation standards applicable to said Generating Assets, at which time the General Duty Standards will cease to be applicable.
- 4.3 Section 4.0 ceases to be applicable on and after December 20, 2004. General Duty Standards have been incorporated as necessary and appropriate for (a) facilities 50 megawatts and larger in the specific Maintenance and Operation Standards (Sections 7.0 and 8.0 along with Appendices D and E), and (b) medium facilities in Items 5.2, 6.2, 7.4 and 8.4.

## **5.0 GENERATOR LOGBOOK STANDARDS (THERMAL ENERGY)**

- 5.1 Required Logbooks. Unless exempted, all Generating Asset Owners shall maintain facility logbooks in conformance with the Generator Logbook Standards (Thermal Energy) for those Generating Assets generating electricity by the use of thermal energy.
- 5.2 Exemption. Generating Assets of less than 50 megawatts are exempt from this section 5.0. Notwithstanding this exemption, each Generating Asset one megawatt or larger and smaller than 50 megawatts is required to maintain a reasonable log of operations and maintenance in a manner consistent with prudent industry practice.
- 5.3 Verified Statement. For each nonexempt Generating Asset, the Generating Asset Owner shall file one original verified statement with the Director of the Commission's CPSD. The verified statement shall include the following:
  - 5.3.1 The identify of the Generating Asset owned by an electrical corporation or located in California (with relevant identification and contact information);
  - 5.3.2 Confirmation that the facility is maintaining logbooks in compliance with the requirements for Generator Logbook Standards (Thermal Energy) ;
  - 5.3.3 Confirmation that the compliance document required by subsection 5.6 has been prepared and is available at the generation facility site;
  - 5.3.4 Confirmation that logbooks and the compliance document are being and will be updated and maintained as necessary; and



5.3.5 Signature, name, title, address, telephone number, facsimile number, electronic mail address, and other relevant information regarding the authorized representative of the Generating Asset Owner.

5.4 Time of Filing. For each Generating Asset in Active Service on the effective date of this General Order, the Generating Asset Owner shall file the Verified Statement within 27 days of the effective date of this General Order.

5.5 Time of Filing for Other Assets. For each Generating Asset placed in Active Service after the effective date of this General Order, the Generating Asset Owner shall file the Verified Statement within 30 days of the Generating Asset being placed in Active Service. When a Generating Asset Owner acquires a Generating Asset from an existing Generating Asset Owner, the new owner shall file a verified statement within 30 days of the effective date of the transfer of title or within 30 days of the transfer of possession, whichever date is later.

5.6 Compliance Document. Each Generating Asset Owner shall prepare and maintain a compliance document. The compliance document will be available at the generation facility site. The compliance document will show:

5.6.1 Where data required by the Generator Logbook Standards (Thermal Energy) is recorded and maintained.

5.6.2 How data is recorded and maintained (*e.g.*, hard copy or electronic).

5.6.3 Any necessary format or presentation protocols that must be understood to decipher the meaning of the electronically or manually maintained data.

5.6.4 Anything else reasonably necessary to fulfill or demonstrate compliance with the Generator Logbook Standards (Thermal Energy).

## **6.0 GENERATOR LOGBOOK STANDARDS (HYDROELECTRIC ENERGY)**

6.1 Required Logbooks. Unless exempted, all Generating Asset Owners shall maintain facility logbooks in conformance with the Generator Logbook Standards (Hydroelectric Energy) for those Generating Assets generating electricity by the use of hydroelectric energy.

- 6.2 Exemption. Locally-controlled generating assets smaller than 50 megawatts are exempt from the entirety of this section 6.0. Notwithstanding this exemption, each locally-controlled Generating Asset of one megawatt or larger is required to maintain a reasonable log of operations and maintenance in a manner consistent with prudent industry practice. Switching centers that control 50 megawatts or more do not fall under this exemption and must keep logbooks concerning switching center operations for all remotely-controlled Generating Assets of one megawatt or larger.
- 6.3 Verified Statement. For each nonexempt Generating Asset, the Generating Asset Owner shall file one original verified statement with the Director of the Commission's CPSD. The verified statement shall include at least the following:
- 6.3.1 The identify of the Generating Asset owned by an electrical corporation or located in California (with relevant identification and contact information);
  - 6.3.2 Confirmation that the facility is maintaining logbooks in conformance with the Logbook Standards for Hydroelectric Facilities;
  - 6.3.3 Confirmation that the compliance document required by subsection 6.6 has been prepared and is available at the generation facility site or remote control or switching center;
  - 6.3.4 Confirmation that logbooks and the compliance document are being and will be updated and maintained as necessary; and
  - 6.3.5 Signature, name, title, address, telephone number, facsimile number, electronic mail address, and other relevant information regarding the authorized representative of the Generating Asset Owner.
- 6.4 Time of Filing. For each Generating Asset in Active Service on the effective date of this General Order, the Generating Asset Owner shall file the Verified Statement within 27 days of the effective date of this General Order.
- 6.5 Time of Filing for Other Assets. For each Generating Asset placed in Active Service after the effective date of this General Order, the Generating Asset Owner shall file the Verified Statement within 30 days of the Generating Asset being placed in Active Service. When a Generating Asset Owner acquires a Generating Asset from an existing Generating Asset Owner, the new owner shall file a verified statement

within 30 days of the effective date of the transfer of title or within 30 days of the transfer of possession, whichever date is later.

- 6.6 Compliance Document. Each Generating Asset Owner shall prepare and maintain a compliance document. The compliance document will be available at the generation facility site or remote control or switching center. The compliance document will show:

6.6.1 Where data required by the Logbook Standards for Hydroelectric Facilities is recorded and maintained.

6.6.2 How data is recorded and maintained (*e.g.*, hard copy or electronic).

6.6.3 Any necessary format or presentation protocols that must be understood to decipher the meaning of the electronically or manually maintained data.

6.6.4 Anything else reasonably necessary to fulfill or demonstrate compliance with the Logbook Standards for Hydroelectric Facilities.

## **7.0 GENERATOR MAINTENANCE STANDARDS**

- 7.1 Applicability of Standards. All Generating Asset Owners shall maintain their Generating Assets in compliance with the Generator Maintenance Standards. Guidelines on how a Generating Asset Owner may comply are available from CPSD.

7.2 Maintenance Plan.

7.2.1. Contents. A Maintenance Plan is a paper or electronic document that shows how the Generating Asset Owner's maintenance practices and policies comply with each Maintenance Standard for each Generating Asset. The Maintenance Plan may be in the form of a narrative, index, spreadsheet, database, web site, or other form. The Maintenance Plan shall specifically identify the procedures and criteria that are used to comply with each Maintenance Standard. Existing equipment manuals, checklists, warranty requirements, and other documents may be identified to demonstrate compliance. If any of these documents are contradictory, the Maintenance Plan should resolve the contradiction. Where the Generating Asset Owner's maintenance does not satisfy a Maintenance Standard, the Maintenance Plan

shall show how and when maintenance will be brought into compliance.

7.2.2. Availability. The current Maintenance Plan for each Generating Asset will be available in the vicinity of each Generating Asset or, in the case of a plant or facility with multiple Generating Assets, in the central business office located at that plant or facility. Upon CPSD's request, a Generating Asset Owner shall submit the current Maintenance Plan (or requested portion thereof) to CPSD in the manner specified in subsection 15.2 of this General Order.

7.2.3. Initial Certification. The Generating Asset Owner shall file an Initial Certification with CPSD that certifies either:

7.2.3.1. Compliance. The Generating Asset Owner has adopted and is implementing a Maintenance Plan that complies with all Generator Maintenance Standards, or

7.2.3.2. Noncompliance. The Generating Asset Owner has (a) identified and documented deficiencies in its maintenance practices and policies, and (b) adopted a course of corrective actions that is reasonably designed to achieve compliance with the Generator Maintenance Standards within 180 days of the date of Initial Certification.

7.2.4. Filing Date for Initial Certification.

7.2.4.1. Asset in Active Service. For each Generating Asset in Active Service on the effective date of Section 7.0 of this General Order, the Generating Asset Owner shall file the Initial Certification within 45 days of the effective date of this section of the General Order.

7.2.4.2. Other Assets: For each Generating Asset placed in Active Service after the effective date of Section 7.0 of this General Order, the Generating Asset Owner shall file the Initial Certification within 90 days of the Generating Asset being placed in Active Service. When a Generating Asset Owner acquires a Generating Asset from an existing Generating Asset Owner, the new owner shall file its Initial Certification within 90 days of the effective date of the transfer of title or within 90 days of the transfer of possession, whichever date is later.

7.3. Maintenance Plan Summary.

7.3.1. Contents. A Maintenance Plan Summary is a paper or electronic document that summarizes the Maintenance Plan. It shall summarize how the Generation Asset Owner's maintenance complies with each Maintenance Standard. It shall be in the format and include the content elements specified by the Commission's Executive Director. Where the Generating Asset Owner's maintenance does not satisfy a Maintenance Standard, the Maintenance Plan Summary shall summarize how and when maintenance will be brought into compliance.

7.3.2. Filing Date.

7.3.2.1. Initial Filing for Assets in Active Service. For each Generating Asset in Active Service, the Generating Asset Owner shall file a Maintenance Plan Summary with CPSD within 120 days of the date the Executive Director specifies the contents and format.

7.3.2.2. Other Assets: For each Generating Asset placed in Active Service after the effective date of Section 7.0 of this General Order, the Generating Asset Owner shall file the Maintenance Plan Summary at the same time as it files its Initial Certification. When a Generating Asset Owner acquires a Generating Asset from an existing Generating Asset Owner, the new owner shall file its Maintenance Plan Summary at the same time it files its Initial Certification.

7.3.2.3. Updates. The Maintenance Plan Summary shall be updated and refiled with CPSD every other year pursuant to a schedule to be determined by CPSD.

7.4. Exemption. Generating Assets smaller than 50 megawatts are exempt from the entirety of Section 7.0. Notwithstanding this exemption, generating assets one megawatt or larger and smaller than 50 megawatts are required to observe the following requirements:

7.4.1. Each facility shall be operated in a safe, reliable, and efficient manner that reasonably protects the public health and safety of California residents, businesses, and the community.

7.4.2. Each facility shall be operated so as to be reasonably available to meet the demand for electricity, and promote electric supply

system reliability, in a manner consistent with prudent industry practice.

- 7.4.3. Each facility shall be operated in a reasonable and prudent manner consistent with industry standards while satisfying the legislative finding that each facility is an essential facility providing a critical and essential good to the California public.

## **8.0 GENERATOR OPERATION STANDARDS**

- 8.1 Applicability of Standards. All Generating Asset Owners shall operate their Generating Assets in compliance with the Generator Operation Standards. Guidelines on how a Generating Asset Owner may comply are available from CPSD.

8.2 Operation Plan.

- 8.2.1. Contents. An Operation Plan is a paper or electronic document that shows how the Generating Asset Owner's operation practices and policies comply with each Operation Standard for each Generating Asset. The Operation Plan may be in the form of a narrative, index, spreadsheet, database, web site, or other form. The Operation Plan shall specifically identify the procedures and criteria that are used to comply with each Operation Standard. Existing equipment manuals, checklists, warranty requirements, and other documents may be identified to demonstrate compliance. If any of these documents are contradictory, the Operation Plan should resolve the contradiction. Where the Generating Asset Owner's operation does not satisfy an Operation Standard, the Operation Plan shall show how and when operation will be brought into compliance.

- 8.2.2. Availability. The current Operation Plan for each Generating Asset will be available in the vicinity of each Generating Asset or, in the case of a plant or facility with multiple Generating Assets, in the central business office located at that plant or facility. Upon CPSD's request, a Generating Asset Owner shall submit the current Operation Plan (or requested portion thereof) to CPSD in the manner specified in subsection 15.2 of this General Order.

- 8.2.3. Initial Certification. The Generating Asset Owner shall file an Initial Certification with CPSD that certifies either:

- 8.2.3.1. Compliance. The Generating Asset Owner has adopted and is implementing an Operation Plan that complies with all Generator Operation Standards, or

8.2.3.2. Noncompliance. The Generating Asset Owner has (a) identified and documented deficiencies in its operation practices and policies, and (b) adopted a course of corrective actions that is reasonably designed to achieve compliance with the Generator Operation Standards within 90 days of the date of Initial Certification.

8.2.4. Filing Date for Initial Certification.

8.2.4.1. Asset in Active Service. For each Generating Asset in Active Service on the effective date of Section 8.0 of this General Order, the Generating Asset Owner shall file the Initial Certification within 90 days of the effective date of this section of the General Order.

8.2.4.2. Other Assets: For each Generating Asset placed in Active Service after the effective date of Section 8.0 of this General Order, the Generating Asset Owner shall file the Initial Certification within 90 days of the Generating Asset being placed in Active Service. When a Generating Asset Owner acquires a Generating Asset from an existing Generating Asset Owner, the new owner shall file its Initial Certification within 90 days of the effective date of the transfer of title or within 90 days of the transfer of possession, whichever date is later.

8.3 Operation Plan Summary.

8.3.1. Contents. An Operation Plan Summary is a paper or electronic document that summarizes the Operation Plan. It shall summarize how the Generation Asset Owner's operation complies with each Operation Standard. It shall be in the format and include the content elements specified by the Commission's Executive Director. Where the Generating Asset Owner's operation does not satisfy an Operation Standard, the Operation Plan Summary shall summarize how and when operation will be brought into compliance.

8.3.2 Filing Date.

8.3.2.1. Initial Filing for Assets in Active Service. For each Generating Asset in Active Service, the Generating Asset Owner shall file an Operation Plan Summary

with CPSD within 120 days of the date the Executive Director specifies the contents and format.

8.3.2.2. Other Assets: For each Generating Asset placed in Active Service after the effective date of Section 8.0 of this General Order, the Generating Asset Owner shall file the Operation Plan Summary at the same time as it files its Initial Certification. When a Generating Asset Owner acquires a Generating Asset from an existing Generating Asset Owner, the new owner shall file its Operation Plan Summary at the same time it files its Initial Certification.

8.3.2.3. Updates. The Operation Plan Summary shall be updated and refiled with CPSD every other year pursuant to a schedule to be determined by CPSD.

8.4. Exemption. Generating Assets smaller than 50 megawatts are exempt from the entirety of Section 8.0. Notwithstanding this exemption, generating assets one megawatt or larger and smaller than 50 megawatts are required to observe the following requirements:

8.4.1. Each facility shall be operated in a safe, reliable, and efficient manner that reasonably protects the public health and safety of California residents, businesses, and the community.

8.4.2. Each facility shall be operated so as to be reasonably available to meet the demand for electricity, and promote electric supply system reliability, in a manner consistent with prudent industry practice.

8.4.3. Each facility shall be operated in a reasonable and prudent manner consistent with industry standards while satisfying the legislative finding that each facility is an essential facility providing a critical and essential good to the California public.

## **9.0 INDEPENDENT SYSTEM OPERATOR (ISO) OUTAGE COORDINATION PROTOCOL**

9.1 Compliance. All Generating Asset Owners shall comply with the Outage Coordination Protocol adopted by the California Independent System Operator.



## **10.0 INFORMATION REQUIREMENTS**

- 10.1 Provision of Information. Upon CPSD's request, a Generating Asset Owner shall provide information in writing concerning (a) a Generating Asset; (b) the operation or maintenance of the Generating Asset; (c) the, Initial Certification, Recertification, Corrective Plan, or Notice of Material Change pertaining to the Generating Asset; (d) any Maintenance, Operation, or Corrective Plans pertaining to the Generating Asset; (e) the design, performance, or history of a Generating Asset; (f) event or outage data concerning a Generating Asset including, but not limited to, unavailability reports or outage cause reports; (g) accounts, books, contracts, memoranda, papers, records, inspection reports of government agencies or other persons; and (h) any other documents or materials. These information requests shall be reasonably related to the requirements of this General Order. If CPSD has indicated when, where, and in what form the information is to be provided, the Generating Asset Owner will provide the information in that manner and will otherwise cooperate with CPSD in the provision of information. Except for an exigent circumstance, a minimum of five business days will be provided for the response. If CPSD determines the existence of an exigent circumstance, CPSD may establish a shorter response period for information reasonably required for CPSD to understand or respond to the exigent circumstance.
- 10.2 Authorization for Release of Information. Upon CPSD's request, a Generating Asset Owner shall authorize governmental agencies to release and provide directly to CPSD any information in that agency's or entity's possession regarding the operation or maintenance of that Generating Asset Owner's Generating Asset. To the extent such agencies have designated information as confidential, CPSD will not disclose that information to the public unless (a) CPSD has been authorized by that agency or entity to disclose the information; (b) the Commission orders or permits disclosure; or (c) a court of competent jurisdiction orders or permits disclosure. Where appropriate, the Commission may enter into a confidentiality agreement with such agency. Upon CPSD's request, a Generating Asset Owner shall authorize other persons or entities to release and provide directly to CPSD any information in the possession of that person or entity regarding the operation or maintenance of that Generating Asset Owner's Generating Asset, in which case the Generating Asset Owner may make a claim of confidentiality pursuant to subsection 15.4 of this General Order.
- 10.3 Generating Asset Information. A Generating Asset Owner's obligations to provide or authorize the release of information specified in subsections 10.1 and 10.2 include, but are not limited by, the following specific requirements concerning Generating Assets:

- 10.3.1 Monthly Report to ISO. As required by Public Utilities Code § 761.3(g), each Generating Asset Owner owning or operating a Generating Asset in California with a rated maximum capacity of 50 megawatts or greater shall provide a monthly report to the ISO (once the ISO has announced it is ready to receive such monthly reports) that identifies any periods during the preceding month when the unit was unavailable to produce electricity or was available only at reduced capacity. The report will include the reasons for any such unscheduled unavailability or reduced capacity.
- 10.3.2 Submission of Information to NERC. Except for Generating Assets for which NERC does not accept data, each Generating Asset Owner shall submit generator design, performance, and event data to NERC for inclusion in GADS. Within the categories of data that NERC accepts, CPSD may specify the data the Generating Asset Owner must submit to NERC. If requested by CPSD, a Generating Asset Owner shall concurrently provide CPSD with a copy of all data submitted to NERC for inclusion in GADS.
- 10.3.3 Transitional Compliance Period. If upon the effective date of this General Order, a Generating Asset Owner is not submitting generator design, performance, or event data concerning a Generating Asset to NERC for inclusion in GADS, the Generating Asset Owner shall do so within a transitional period of 180 days of the effective date of this General Order. Upon CPSD's request, the Generating Asset Owner shall provide comparable data directly to CPSD until the Generating Asset Owner begins to submit that information to NERC and the information becomes available to CPSD.
- 10.3.4 Historical Information. Upon CPSD's request, and for any period after January 1, 1998, a Generating Asset Owner shall provide CPSD and/or NERC with generator design, performance, or event data concerning a Generating Asset.
- 10.4 Safety-related Incidents. Within 24 hours of its occurrence, a Generating Asset Owner shall report to the CPSD Director or designee, either verbally or in writing, any safety-related incident involving a Generating Asset. Such reporting shall include any incident that has resulted in death to a person; an injury or illness to a person requiring overnight hospitalization; a report to Cal/OSHA, OSHA, or other regulatory agency; or damage to the property of the Generating Asset Owner or another person of more than \$50,000. The Generating Asset Owner shall also report any other incident involving a Generating Asset that has resulted in significant

negative media coverage (resulting in a news story or editorial from one media outlet with a circulation or audience of 50,000 or more persons) when the Generating Asset Owner has actual knowledge of the media coverage. If not initially provided, a written report also will be submitted within five business days of the incident. The report will include copies of any reports concerning the incident that have been submitted to other governmental agencies.

## **11.0 AUDITS, INSPECTIONS, AND INVESTIGATIONS**

- 11.1 General Requirement. A Generating Asset Owner shall cooperate with CPSD during any audit, inspection, or investigation (including but not limited to tests, technical evaluations, and physical access to facilities). An audit, inspection, or investigation may extend to any records pertaining to the specifications, warranties, logbooks, operations, or maintenance of the Generating Asset. Generating Asset Owners, as entities subject to ongoing regulation under this General Order, are hereby notified that these audits, inspections, or investigations will occur on a regular, systematic, and recurring basis supplemented as needed by additional audits, inspections, or investigations to ensure compliance with this General Order.
- 11.2 Interviews and Testimony. Upon CPSD's request, a Generating Asset Owner, its employees, and its contractors shall provide testimony under oath or submit to interviews concerning a Generating Asset, its specifications, warranties, logbooks, operations, or maintenance.
- 11.3 Tests and Technical Evaluations. Upon CPSD's request, a Generating Asset Owner shall conduct a test or technical evaluation of a Generating Asset (or shall contract with an auditor, consultant, or other expert, mutually selected by CPSD and the Generating Asset Owner, to conduct the test or technical evaluation) so as to provide information reasonably necessary for determining compliance with the Standards enforced by this General Order. The Generating Asset Owner will pay all costs and liabilities resulting from such tests or technical evaluations, except for CPSD's own staff expenses. If a test or technical evaluation may reasonably result in the reduced or suspended generation from a Generating Asset, the Generating Asset Owner shall notify CAISO as soon as the Generating Asset Owner becomes aware of the test or technical evaluation.
- 11.4 Preservation of Records. A Generating Asset Owner shall retain all records including logbooks, whether in paper or electronic format, concerning the operation and maintenance of a Generating Asset for five years. Any subsequent modification to a record must show the original

entry, the modified entry, the date of the modification, the person who made or authorized the modification, and the reason for the modification.

- 11.5 Third-Party Audits, Tests, or Technical Evaluations. During an audit, test, or technical evaluation conducted under this section 11.0, a Generating Asset Owner may submit, or authorize access to, audits, tests, inspections, or technical evaluations previously performed by government agencies, insurance companies, or other persons or entities. While this third-party information may be relevant to the inquiry, the information may not be sufficient, in and of itself, to demonstrate compliance with the standards. CPSD will determine whether a third-party audit, test, inspection, or technical evaluation is sufficient for the purposes of this section 11.0.

## **12.0 VIOLATIONS**

- 12.1 Violation. A Violation is the failure of a Generating Asset Owner to comply with a requirement of this General Order.
- 12.2 Retaliation. Any adverse action, as that term has been used and applied under Title VII of the Civil Rights Act, 42 U.S.C. § 2000e *et seq.* or the California Fair Employment and Housing Act, Gov. Code § 12940 *et seq.*, taken by a Generating Asset Owner against an officer, employee, agent, contractor, subcontractor, or customer of a Generating Asset Owner for reporting a Violation of the Standards, reporting a Violation of this General Order, or providing information during the course of an audit, inspection, or investigation is also a Violation of this General Order.

## **13.0 COMMISSION PROCEEDINGS**

- 13.1 Formal Enforcement Proceedings. In responding to alleged Violations of this General Order, the Commission may initiate any formal proceeding authorized by the California Constitution, the Public Utilities Code, other state and federal statutes, court decisions or decrees, the Commission's RULES OF PRACTICE AND PROCEDURE, or prior Commission decisions or rulings.
- 13.2 Other Commission Remedies. In enforcing the provisions of this General Order, the Commission may pursue any other remedy authorized by the California Constitution, the Public Utilities Code, other state or federal statutes, court decisions or decrees, or otherwise by law or in equity.
- 13.3 Imposition of Fines for Specified Violations
- 13.3.1 Specified Violations. For specified Violations of this General Order, CPSD may assess a scheduled fine or, in the alternative, proceed with any remedy otherwise available to CPSD or the

Commission. Scheduled fines may be assessed only on the concurrence of the Generating Asset Owner against whom the fine is imposed and only for the Violations set forth in subsection 13.3.2 of this General Order.

- 13.3.2 Schedule of Fines. The specified Violations and the corresponding fines that may be assessed are set forth in Appendix F to this General Order. The Commission may modify this schedule of fines no earlier than 30 days after providing reasonable notice and affording interested persons with an opportunity to comment.
- 13.3.3 Acceptance of Assessed Fine. A Generating Asset Owner may accept or contest the assessment of a scheduled fine. In the event the Generating Asset Owner accepts the assessment and elects to pay the scheduled fine in lieu of a formal proceeding, the Generating Asset Owner shall so notify CPSD in writing within 30 days of the assessment, shall pay the fine in full, and shall bring itself into compliance with the applicable provision(s) of the General Order within 30 days of the written acceptance. Fines shall be submitted to CPSD for payment into the State Treasury to the credit of the General Fund. Fines are delinquent if not paid within 30 days of the Generating Asset Owner's acceptance; and, thereafter, the balance of the fine bears interest at the legal rate for judgments.
- 13.3.4 Contest of Assessed Fine. If a Generating Asset Owner contests the assessment of a scheduled fine, the Generating Asset Owner must file its contest within 30 days of the assessment. In the event of such a contest, CPSD may withdraw the offer of a scheduled fine and proceed with any remedy otherwise available to the Commission; and, in thereafter sanctioning a Violation, the Commission and CPSD will not be limited by the Schedule of Fines set forth in Appendix F to this General Order.
- 13.4 Punishment of Contempt. If the Commission determines that the Generating Asset Owner has violated Public Utilities Code § 2113, the Commission may punish the contempt in the same manner and to the same extent as contempt is punished by the courts of record in this state. The Commission, other persons, and other government agencies may still pursue any other remedies available to them.
- 13.5 Other Remedies. The Commission's enforcement of this General Order by informal proceedings, formal proceedings, or other remedies does not bar or affect the remedies otherwise available to other persons or government agencies.

## **14.0 SANCTIONS**

14.1 Sanctions. Consistent with prior Commission decisions, the following factors will be considered in determining the sanctions to be imposed against a Generating Asset Owner for violating this General Order:

14.1.1 The diligence and reasonableness demonstrated by the Generating Asset Owner in attempting to prevent a Violation, in detecting a Violation, in disclosing a Violation to CPSD and other requisite government agencies, and in rectifying a Violation.

14.1.2 The seriousness of the Violation in terms of injury, if any, to persons, property, and the integrity of the regulatory process.

14.1.3 The number and seriousness of any prior Violations.

14.1.4 The Generating Asset Owner's financial resources.

14.1.5 The totality of the circumstances in furtherance of the public interest.

14.1.6 Commission precedent.

14.2 Mitigation of Sanctions. The following factors may be considered as mitigation in considering the sanctions to be imposed for violating this General Order:

14.2.1 The Generating Asset Owner's demonstrated, substantial compliance with any guidelines or other guidance issued by the Committee or the Executive Director concerning the Standards and requirements of this General Order.

14.2.2 Conflicting or competing requirements imposed on the Generating Asset Owner by other governmental agencies; warranty requirements; power contract requirements; or requirements imposed by the California Independent System Operator, NERC, or the Western Electricity Coordinating Council.

14.2.3 Penalties already imposed on the Generating Asset Owner by other governmental agencies, contracts, or other regulatory bodies for the same acts or omissions resulting in Violations of this General Order.

14.2.4 The Generating Asset Owner's demonstrated cooperation in assisting the Commission and CPSD in the enforcement of this General Order.

14.3 Enhancement of Sanctions. The following enhancing factors may be considered in increasing the sanctions that would otherwise be imposed for violating this General Order:

14.3.1 The Generating Asset Owner's demonstrated, substantial noncompliance with any guidelines or other guidance issued by the Committee or the Executive Director concerning the Standards and requirements of this General Order.

14.3.2 The Generating Asset Owner's repetitive violations of the Standards, the Public Utilities Code, or this General Order.

14.3.3 The Generating Asset Owner's violations of the Standards or this General Order have resulted in the failure to deliver electricity as scheduled by the Independent System Operator or in actual power outages.

14.3.4 The Generating Asset Owner's failure to report, as required, or cooperate with the Commission and CPSD in any investigation, audit, inspection, test, or technical evaluation.

14.3.5 The Generating Asset Owner's efforts to impede or frustrate CPSD in the enforcement of this General Order. A Generating Asset Owner's lawful and reasonable assertion of its rights under this General Order or state or federal law will not be used to enhance a sanction.

14.4 Not Applicable to Specified Fines. The factors set forth in subsections 14.1, 14.2, and 14.3 do not apply to those specified Violations, set forth in Appendix F, for which a scheduled fine has been assessed against and accepted by a Generating Asset Owner, pursuant to subsection 13.3 of this General Order.

## **15.0 MISCELLANEOUS PROVISIONS**

15.1 Ongoing Reporting Obligations.

15.1.1. Periodic Recertifications. For each Generating Asset not exempted under subsections 5.2, 6.2, 7.4, or 8.4, the Generating Asset Owner shall file a recertification that it continues to maintain logbooks as required under sections 5.0 or 6.0 of this General Order and continues to implement a Maintenance Plan and an Operation Plan, as described in Sections 7.0. and 8.0. of this General Order, in a manner that complies with the Generator Maintenance Standards and Generator Operation Standards. The recertifications will be

filed every other year pursuant to a schedule to be determined by CPSD.

- 15.1.2. Notice of Material Change. A Generating Asset Owner shall notify CPSD of (a) any previously unreported deficiency in its operation or maintenance practices (including logbook practices); or (b) any correction or amendment to the Initial Certification, Recertification, Maintenance Plan Summary or Operation Plan Summary pertaining to a Generating Asset that is required because of a material change in the operation or maintenance of the Generating Asset. A material change is a modification of the characteristics, operation, or maintenance of a Generating Asset when that change reasonably could be expected to significantly improve or degrade the reliability, output, or performance of the Generating Asset. The Generating Asset Owner shall file a Notice of Material Change within 30 days of the known occurrence of the material change.
- 15.2 Filings and Submissions. All Certifications, Recertifications, Notices, or other submissions of information or data in response to Commission requests and the requirements of this General Order will be filed directly with the CPSD, Electric Generation Performance Program, at 505 Van Ness Ave., San Francisco, CA 94102. Documents must be received by CPSD on the day they are due. In addition to or instead of paper filings, CPSD may require electronic submissions of all filings that reasonably can be created in that format.
- 15.3 Oath, Affirmation or Verification. Each formal filing with the Commission (i.e., Certification, Recertification, Notice, Contest, Maintenance Plan Summary, Operation Plan Summary, Updates of Plan Summaries) will be under the written oath, affirmation, or verification of a corporate officer of the Generating Asset Owner.
- 15.4 Confidentiality. All claims of confidentiality related to the implementation and enforcement of this General Order must be based on the provisions of this subsection.
- 15.4.1 Burden of Establishing Privilege. A Generating Asset Owner must accompany any requests for confidential treatment of information with a reference to the specific law prohibiting disclosure, the specific statutory privilege that it believes it holds and could assert against disclosure, or the specific privilege it believes the Commission may and should assert against disclosure. The Generating Asset Owner bears the burden of proving why any particular document, or portion of a document, must or should be withheld from public disclosure.



15.4.2 Confidentiality Claims Requiring Balancing of Interests. If a confidentiality request is based on a privilege or exemption requiring a balancing of interests for and against disclosure, rather than on a statutory prohibition against disclosure or a privilege held by the Generating Asset Owner, the Generating Asset Owner must demonstrate why the public interest in an open process is clearly outweighed by the need to keep the material confidential. A Generating Asset Owner which is a public utility should not cite Public Utilities Code § 583 as a sole basis for the Commission's nondisclosure of information since, as noted in D.91-12-019, § 583 does not create for a utility any privilege that may be asserted against the Commission's disclosure of information or designate any specific types of documents as confidential.

15.4.3 Requirements. A Generating Asset Owner desiring confidential treatment of information provided to the Commission shall at a minimum:

15.4.3.1 Specifically indicate the information that the Generating Asset Owner wishes to be kept confidential, clearly marking each page, or portion of a page, for which confidential treatment is requested.

15.4.3.2 Identify the length of time the Generating Asset Owner believes the information should be kept confidential and provide a detailed justification for the proposed length of time. The business sensitivity of information generally declines over time and the balancing of interests for and against disclosure may change accordingly.

15.4.3.3 Identify any specific provision of state or federal law the Generating Asset Owner believes prohibits disclosure of the information for which it seeks confidential treatment and explain in detail the applicability of the law to that information.

15.4.3.4 Identify any specific privilege the Generating Asset Owner believes it holds and may assert to prevent disclosure of information and explain in detail the applicability of that law to the information for which confidential treatment is requested. For example, if a Generating Asset Owner asserts that information is subject to a trade secret privilege

(Evidence Code § 1060 *et seq.*), the Generating Asset Owner must explain (a) how the information fits the definition of a protectible trade secret (*e.g.*, how the information provides its holder with economic value by virtue of its not being generally known to the public and what steps the Generating Asset Owner has taken to maintain the secrecy of the information); and (b) why allowance of the privilege will not tend to conceal fraud or otherwise work injustice.

15.4.3.5 Identify any specific privilege the Generating Asset Owner believes the Commission holds and may assert to prevent disclosure of information and explain in detail the applicability of that privilege to the information for which confidential treatment is requested. For example, if the privilege is one that involves a balancing of public interests for and against disclosure, such as the official information privilege in Evidence Code § 1040(b)(2), the Generating Asset Owner must demonstrate that the information at issue falls within the definition of official information and the Commission's disclosure of the information is against the public interest because there is a necessity for preserving the confidentiality of the information that outweighs the necessity for disclosure in the interest of justice.

15.4.3.6 State whether the Generating Asset Owner would object if the information were disclosed in an aggregated format.

15.4.3.7 State whether and how the Generating Asset Owner keeps the information confidential and whether the information has ever been disclosed to a person other than an employee of the Generating Asset Owner.

15.4.4 Duration of Confidentiality Claims. A confidentiality claim, whether or not specifically acted upon by the Commission, expires on the earliest of the following dates: (a) at the end of the period specified by the Generating Asset Owner pursuant to subsection 15.4.3.2; (b) at the end of a period specified in a specific Commission ruling or decision; or (c) two years after the claim was first asserted before the Commission. To reassert the

confidentiality claim, the Generating Asset Owner must again satisfy the requirements of this subsection 15.4 before the end of the confidentiality period. Staff may disclose information provided under a claim of confidentiality if the Commission has already authorized disclosure of that class of information.

- 15.5 Disclosure to Other Agencies. If the Commission provides any information to another governmental agency (whether in response to a request, subpoena, or on the Commission's own initiative), the Commission will ensure that the information is accompanied with a copy of any confidentiality claim that has been submitted pursuant to subsection 15.4 of this General Order. Where appropriate, the Commission may enter into a confidentiality agreement with the other governmental agency. When the Commission obtains information indicating a possible violation of any federal, state, or local law, the Commission may provide that information to the appropriate governmental agency. Even though a claim of confidentiality has been made, the claim of confidentiality will not prevent the Commission from providing that information to the appropriate governmental agency.
- 15.6 Compliance with Other Laws. Pursuant to California Public Utilities Code § 761.3(f), enforcement of any Standard will not modify, delay, or abrogate any deadline, standard, rule or regulation that is adopted by a federal, state, or local agency for the purposes of protecting public health or the environment including, but not limited to, any requirements imposed by the California State Air Resources Board, an air pollution control district, or an air quality management district pursuant to Division 26 (commencing with section 39000) of the California Health and Safety Code.
- 15.7 Committee Amendments. The Committee may file any amendment to the Standards, duly adopted by the Committee, with the Commission's Docket Office. The Committee shall serve the amendment on CPSD or its successor. The amendment will become enforceable by the Commission under this General Order on the thirtieth day following publication of the notice of filing in the Commission's *Daily Calendar* (or successor publication). In its filing of any amendment, the Committee shall reference this General Order and request publication of the notice of the filing in the Commission's *Daily Calendar* (or any successor publication). In the case of any amendments, the Executive Director will make the appropriate codification revisions to the appendices to this General Order.
- 15.8. Duration of Standards. When the Committee ceases to exist pursuant to Public Utilities Code § 761.3(b)(3), the Standards, as on file with the Commission on the date the Committee ceases to exist, will remain effective and enforceable by the Commission under this General Order.

The Commission thereafter may amend the Standards in a rulemaking proceeding and enforce the Standards as amended, all in exercise of its responsibilities under the California Constitution, Public Utilities Code, and this General Order.

- 15.9 Extension of Time. For good cause shown, a Generating Asset Owner may request the extension of any deadline established in or pursuant to this General Order. The request must be in writing and submitted in advance of the deadline to the Executive Director or the Executive Director's designee. Pursuant to the request, the Executive Director may grant one or more extensions, if the Executive Director determines that a good and sufficient reason exists for the extension. The extension will specifically indicate its duration.
- 15.10 Guidance. The Executive Director may promulgate forms, instructions, advisories, and other guidance to Generating Asset Owners aiding them in achieving compliance with this General Order.
- 15.11 Severability. If a court of competent jurisdiction determines that any provision of this General Order is void or unenforceable, the Commission will continue to enforce the remainder of the General Order without reference to the void or unenforceable provision.
- 15.12 Effective Date. This General Order is effective on the third day following the mailing of the Commission's decision adopting this General Order. The initial Commission decision adopting this General Order was mailed May 7, 2004, and the General Order became effective May 10, 2004. Changes to this General Order are effective on the third day following the mailing of the Commission's decision adopting those changes. This includes changes regarding Generator Maintenance Standards and Generator Operation Standards (Sections 7.0, 8.0, Attachment D and Attachment E, plus related parts in Sections 2, 3, 4 and 15).

## **APPENDIX A: GENERAL DUTY STANDARDS FOR OPERATIONS AND MAINTENANCE**

Pursuant to California Public Utilities Code § 761.3, each facility used for the generation of electricity owned by an electrical corporation or located in California (Facility) shall be operated and maintained by its owner(s) and operator(s) in accordance with the following standards:

1. Each Facility shall be operated and maintained in a safe, reliable and efficient manner that reasonably protects the public health and safety of California residents, businesses, employees, and the community.
2. Each Facility shall be operated and maintained so as to be reasonably available to meet the demand for electricity, and promote electric supply system reliability, in a manner consistent with prudent industry practice.
3. Each Facility shall comply with the protocols of the California Independent System Operator for the scheduling of power plant outages.
4. [Reserved.]
5. Each Facility shall maintain reasonable logs of operations and maintenance in a manner consistent with prudent industry practice.
6. Each Facility shall be operated and maintained in a reasonable and prudent manner consistent with industry standards while satisfying the legislative finding that each facility is an essential facility providing a critical and essential good to the California public.

Pursuant to California Public Utilities Code § 761.3(a), the California Public Utilities Commission shall implement and enforce these General Duty Standards for Operation and Maintenance. Pursuant to the provisions of California Public Utilities Code § 761.3(f), nothing in these General Duty Standards for Operations and Maintenance shall modify, delay, or abrogate any deadline, standard, rule or regulation that is adopted by a federal, state, or local agency for the purposes of protecting public health or the environment, including, but not limited to, any requirements imposed by the California State Air Resources Board, an air pollution control district, or an air quality management district pursuant to Division 26 (commencing with Section 39000) of the California Health and Safety Code.

**(END OF APPENDIX A)**

## **APPENDIX B: GENERATOR LOGBOOK STANDARDS (THERMAL ENERGY)**

### **I. PURPOSE**

The intent of this document is to define the requirements for facility logs for plants generating electricity by the use of thermal energy.

### **II. GENERAL**

Each generating facility shall maintain a Control Operator Log that contains the chronological history of the facility including detailed entries regarding the operations and maintenance of the facility. Where information is unit specific, information for each unit must be recorded and so identified.

The Control Operator Log is a formal record of real time operating events as well as the overall status of the generating units and auxiliary equipment under the purview of the Control Room Operator. The log shall also contain an accurate and concise record of important and/or unusual events involving operations, maintenance, water chemistry, safety, accidents affecting personnel, fires, contractor activities, environmental matters, and any other pertinent information concerning the operation of the facility. The log shall also record communications between the facility and outside entities including but not limited to the Independent System Operator (ISO), scheduling coordinators or headquarters facilities, regulators, environmental agencies, CalOSHA or similar agencies. The log shall be maintained notwithstanding and in addition to any other similar requirements that mandate that events be recorded. The generator must collect and record all information specified in these standards. All such information must be readily available to operators, California Public Utilities Commission staff, and other authorized personnel at all times.

Notwithstanding the above, generators may elect to record certain kinds of information in separate logs, as authorized by either Exception 1 or Exception 2 below. The information specified in Exception 1 may be recorded in an Equipment Out of Service Log. Similarly, the information specified in Exception 2 may be recorded in a Work Authorization log. Information recorded in these separate logs need not be recorded in the Control Operator log.

All required logs entries shall be retained in hard copy, electronic format, or both for a minimum period of five years from the date of the log entry. Each log entry shall start by recording the time of the event. The Generating Asset Owner (GAO) is responsible for maintaining the integrity of the generating facility logs.

Each facility must record a Plant Status Entry at least once each calendar day. If practicable, the control operator shall make that entry at midnight; however, a facility may for operational reasons elect to make that entry at another time. In any case, the

Plant Status Entry must be made at the same time each day, except when emergency conditions require a postponement. In the case of such emergency conditions, the entry for that day shall be made as soon as it is safe to do so.

Information in the Plant Status Entry shall include:

- 1) Unit status, if on line, including:
  - Current Mega Watt (MW) load.
  - Generator Kilo Volt (KV) and Mega VAR (MVAR) readings.
  - Fuel type and availability.
  - For units equipped with Automatic Generation Control (AGC), the status of AGC equipment, including the availability of AGC, its operational status (on or off), and the normal range of output possible when the unit is operating under AGC.
  - Condenser water box differential pressures, condenser back pressure/vacuum readings, boiler and pre-boiler water chemistry readings (if applicable).
  - Status of environmental monitoring equipment.

Or if off line:

  - Type of outage with expected return date/time (including the ISO outage ID number).
  - Any other reason the unit is off line.
- 2) Any unit MW output restrictions (de-rates) including reasons for and expected time/date of release (including the ISO outage ID number).
- 3) Status of any environmental constraints (for example total annual NO<sub>x</sub> allowable emissions vs. year to date total emissions or, for jet peakers, total allowable run time vs. current year to date actual run time).
- 4) Equipment out of service, including any equipment that has been isolated and prepared for an upcoming work authorization with particular emphasis on redundant equipment that if the primary equipment fails, will result in a load restriction or a unit trip (see Exception 1).
- 5) Any abnormal operating conditions.
- 6) Outstanding work authorizations commonly referred to as clearances (see Exception 2).
- 7) Status of any retention/waste basins.
- 8) Status of any water conditioning equipment such as facility demineralizers and in stream demineralizers.
- 9) The on hand quantities of large consumables including distilled water, hydrogen, nitrogen and hypochlorite, if applicable.
- 10) Any other pertinent information regarding the status and reliability of the facility.

The first entry in the Control Operator Log at the start of a shift shall identify each operator on that shift and by some regular means distinguish his/her responsibilities (list in a regular order the identity of the Shift Supervisor(s), Control Operator(s), Assistant Control Operator(s) and Plant Equipment Operator(s)). This initial entry shall indicate that the crew has ascertained the plant status through the shift turnover, review of the log and a check of the indications and alarms in the control room.

Events shall be logged chronologically as they occur. Significant entries will include the control operator's name at the end of the entry preceded by the name(s) of others involved in the activity.

The events recorded in the Control Operator log shall include, but are not limited to, the following:

- 1) Any changes to generator MW output (except when on AGC). The current load of the unit shall be recorded as well as the new target load and the reason for the load change including:
  - a) As directed by the day ahead schedule.
  - b) Deviations from the schedule as directed by a scheduling coordinator.
  - c) Load reductions for scheduled equipment outages (cleaning condensers, pump repairs, etc.).
  - d) ISO directions.
  - e) Unplanned unit equipment problems (forced derates) including load restrictions for environmental causes.
  - f) Reducing to minimum load.
  - g) Any other reason.
- 2) Starting and stopping of equipment and any associated abnormal conditions.
- 3) Significant operations and milestones in the process of major operations such as start-ups, shutdowns and heat-treats.
- 4) During a unit start up, once on line, each generator load increment released to the scheduling coordinator.
- 5) Each instance where a unit is placed on or removed from AGC, including a notation if the AGC limits are set for a different value than the normal AGC range for that unit.
- 6) Any changes to the future schedule for generator output.
- 7) Detailed account of unit trips including any known or suspected causes and remedial action taken.
- 8) Load limit position anytime it is placed at any value less than full load and reason for such action.



- 9) All information related to planned outages or de-rates, including but not limited to communications with scheduling coordinators, headquarters, or the ISO regarding such outages (including requests to take an outage; and notification to the facility that such outages have been approved or denied), the nature of the work to be completed during the outage, initial and revised return-to-service dates, completion of milestones in such work, requests to the ISO or others for extension of such outages including the reason for that extension, and completion of such outages. All entries shall include the date, time, duration, reason or explanation and the identities of all involved.
- 10) All information related to forced outages or de-rates, including but not limited to communications with scheduling coordinators, headquarters, or the ISO regarding such outages; the nature of the problem; progress reports on further diagnosis of the problem or on ongoing repairs; estimated and revised return-to-service dates; the nature of any extended work to be completed during the outage; completion of milestones in such work; and completion of such outages. All entries shall include the date, time, duration, reason or explanation and the identities of all involved.
- 11) All work authorizations issued and released and the reason for such work.
- 12) Equipment placed in a not normal status.
- 13) Equipment declared out of service (OOS) including date and time of initial OOS declaration.
- 14) Any current or potential fuel-supply problems.
- 15) Results of performance tests including heat rate tests, hotwell drop tests, turbine stop valve tests, etc.
- 16) Equipment outages of environmentally sensitive equipment or environmental monitoring devices.
- 17) All out-of-limit water chemistry conditions including duration and remedial actions, as well as all boiler chemical feeds and boiler drum blowdowns where applicable.
- 18) Changes in equipment/systems status (such as a suspected boiler tube leak, fouled condensers, or a feedwater heater tube leak).
- 19) Detailed information regarding environmental limitations exceeded, including the date, time, duration, amount, and any known or suspected cause.
- 20) Detailed reports of observations related to transmission system or facility trouble involving frequency or voltage deviations.
- 21) Report of any industrial accident including all details of the incident and the names of all parties involved.
- 22) All other pertinent information concerning the operation of the facility including names of all individuals involved.

Exceptions:

1. In lieu of logging equipment out of service information in the plant status entry, an Equipment OOS Log may be utilized, at the discretion of the GAO, to track equipment declared out of service. The work authorization program is intended to provide a safe work environment for current maintenance activities. If a delay is encountered in the repair process, the work authorization should be released and the equipment declared OOS. If the OOS designation is expected to be of short duration (five days or less), the OOS entry should be carried forward in the plant status Control Operator Log entry. If a longer period is anticipated, the OOS entry can be recorded in the OOS log to avoid carrying it forward repeatedly in the CO log. Information in the OOS log shall include the following:
  - Equipment description
  - Date declared OOS
  - Reason for being declared OOS
  - Estimated time for equipment to return to service
  - Name of person declaring equipment OOS
  - Maintenance order number or similar tracking mechanism
  - Contact person(s)
  - Date equipment is returned to service
2. In lieu of logging outstanding work authorizations in the plant status entry, a Work Authorization log book may be utilized, at the discretion of the GAO, during periods of construction, overhauls, or major work; and contains work authorizations, commonly referred to as clearances issued, released, and associated with the special activity. All other entries pertaining to the special activity shall be entered in the Control Operator log. Work authorization log entries do not need to be carried forward for each plant status but may remain for the duration of the special activity. Information in the Work Authorization log shall include the following:
  - Date and time the clearance was issued.
  - Name of the Control Operator or Assistant Control Operator issuing the clearance.
  - Identification of clearance.
  - Name of person the clearance is issued to.

### **III. THERMAL PLANTS TO WHICH THESE STANDARDS ARE APPLICABLE**

Thermal Logbook Standards are applicable to each facility that generates electric energy by the use of thermal resources owned by an electrical corporation or located in California that is 50 MW or larger. Thermal Logbook Standards are not applicable in the following cases (see California Pub. Util. Code §§ 761.3(d), 761.3(h)):

1. Nuclear-powered generating facilities that are federally regulated and subject to standards developed by the Nuclear Regulatory Commission, and that participate as members of the Institute of Nuclear Power Operations.
2. Qualifying small power production facilities or qualifying cogeneration facilities within the meaning of §§ 201 and 210 of Title 11 of the federal Public Utility Regulatory Policies Act of 1978 (16 U.S.C. Secs. 796(17), 796(18), and 824a-3), and the regulations adopted pursuant to those sections by the Federal Energy Regulatory Commission (18 C.F.R. Secs. 292.101 to 292.602, inclusive).
3. Generation units installed, operated, and maintained at a customer site, exclusively to serve that customer's load.
4. Facilities owned by a local publicly owned electric utility as defined in California Pub. Util. Code § 9604(d).
5. Any public agency that may generate electricity incidental to the provision of water or wastewater treatment.
6. Facilities owned by a city and county operating as a public utility, furnishing electric service as provided in California Pub. Util. Code § 10001.

Electrical corporation does not include electric plant:

- a. where electricity is generated on or distributed by the producer through private property solely for its own use or the use of its tenants and not for sale or transmission to others (§ 218(a)),
- b. employing cogeneration technology or producing power from other than a conventional power source solely for one or more of three named purposes (§ 218(b)),
- c. employing landfill gas technology for one or more of three named purposes (§ 218(c)),
- d. employing digester gas technology for one or more of three named purposes (§ 218(d)), and
- e. employing cogeneration technology or producing power from other than a conventional power source for the generation of electricity that physically produced electricity prior to January 1, 1989, and furnished that electricity to immediately adjacent real property for use thereon prior to January 1, 1989 (§ 218(e)).

**(END OF APPENDIX B)**

## **APPENDIX C: GENERATOR LOGBOOK STANDARDS (HYDROELECTRIC ENERGY)**

### **I. PURPOSE**

The intent of this document is to define requirements for operation logs for attended and unattended hydroelectric generating facilities. These standards are intended to ensure that operating information associated with normal operation, maintenance, and abnormal activities are properly recorded and available for review and analysis by regulatory agencies

### **II. GENERAL**

Owners of hydroelectric generating facilities shall maintain logbooks or other data collection systems that contain the chronological, real-time operational history of the facilities. Logbooks shall include accurate and concise entries regarding the operations and maintenance of the facility and overall status of the generating units and auxiliary equipment. Logbooks shall be maintained at attended facilities, control centers for unattended facilities, and unattended facilities, as described more fully below.

Logbooks shall include, as appropriate, entries of important and/or unusual events relating to safety, accidents, environmental matters, and any other information pertinent to operations. Where information is unit specific, information for each unit must be recorded and so identified. Logbooks shall also contain entries noting operations and maintenance communications between the facility operator and outside entities, including but not limited to the Independent System Operator (ISO), scheduling coordinators or headquarters facilities, regulators, environmental agencies, CalOSHA or similar agencies. The logbooks shall be maintained notwithstanding and in addition to any other similar requirements that mandate that events be recorded.

Owners of hydroelectric generating facilities must collect and record, either through automated data collection systems, written logbooks, or both, all information specified in this standard. Such information must be readily available to operators, California Public Utilities Commission staff, and other authorized personnel at all times, and must be kept for a minimum period of five years from the date of collection. The owner of the hydroelectric facility is responsible for maintaining the integrity of the information collected and recorded. Any corrections to logbook entries shall be made in a manner that preserves the legibility or integrity of the original entry, and identifies the date and time of the correction. Each utility (and facility) will maintain a list of any approved abbreviations used by operators in that utility (and that particular facility), along with a definition of each abbreviation.

### **III. REQUIRED INFORMATION**

#### **A. Attended Facilities and Control Centers for Unattended Facilities**

Logbooks at attended facilities and control centers for unattended facilities shall be the chronological, real-time record of the operation and maintenance activities that occur either at the attended facility or the unattended facilities within the jurisdiction of the control center, respectively.

Information collected and recorded by automatic devices may be maintained separately and need not be entered in the logbook itself, provided that the information is available for review and shall be maintained in accordance with the standards set forth herein for the daily operations logbooks.

Each logbook shall consist of accurate, concise entries and shall contain at least the information specified below. To the extent any of the information below is not available to the control center operator, it shall be captured either by automated systems or recorded in the Unattended Facilities Log.

1. Orders and other communications received and transmitted by the operator, as appropriate, including but not limited to those from or to the Independent System Operator (ISO); scheduling coordinators, headquarters facilities and/or dispatchers; transmission operating centers; regulators; environmental agencies; CalOSHA; or similar agencies;
2. Actions taken by the operator to change load, derate the unit, or take the unit off line,
3. Operational data, including power production (load) levels, water flows, the availability and operation of automatic generation control (AGC), and any generation limits applicable to AGC operation other than the normal limits specified in the Participating Generator Agreement with the California Independent System Operator;
4. Operation of system protection relays;
5. Water regulation (e.g., downstream water requirements, FERC license requirements);
6. Unit separation and parallel times;
7. Clearances/Work authorizations;
8. Reporting on and off clearances;
9. Start and completion of switching operations;
10. The application, removal, moving, or change in location and/or number of grounding devices;
11. Site emergency activities; including but not limited to accidents, spills and earthquakes;

12. Trouble reports; including but not limited to those involving equipment failures and those from outside persons or entities;
13. Daily operations, including unit outages and de-ratings, Automatic Voltage Regulator/Power System Stabilizer operations, voltage operations, governor operations, and black-start operations, if applicable;
14. Special system setups for hydraulic, mechanical, electrical or pneumatic systems.

Each entry shall include the time, location and description of event, including, as relevant, the equipment involved, loads and other readings, voltage orders, directed load changes, deviations from generation schedules, weather, annunciator alarms or other indications, relay target information including device number, limitations, notifications, and corrective actions. Entries noting communications between the operator and outside parties shall include the names of the persons involved in the communication.

#### B. Unattended Facilities

Logbooks at unattended facilities shall be the chronological record of operation and maintenance activities that occur when personnel visit an unattended facility. Entries in logbooks at unattended facilities shall be made consecutively and shall include the following information, as applicable:

1. Time and date of entry and exit;
2. Name(s) of personnel entering/exiting the station;
3. Location of event;
4. Text description of event/reason for entering station;
5. All information pertinent to event, including but not limited to equipment involved, loads and other readings, voltage orders, directed load changes, deviations, weather, annunciator alarms or other indications, relay target information including device number, curtailments, limitations, notifications, corrective actions;
6. The application, removal, moving, or change in location and/or number of grounding devices;
7. Clearances/Work authorizations.

**(END OF APPENDIX C)**

## **APPENDIX D: MAINTENANCE STANDARDS FOR GENERATING ASSET OWNERS**

Maintenance Standards (MS) 1 through 18 apply to each covered generating asset. (See GO 167, §§ 3 and 7.) A separate document containing recommended guidelines may be obtained from the Commission's Consumer Protection and Safety Division (or successor entity). (See GO 167 § 15.2.) The guidelines are intended to assist each generating asset owner determine how it may comply with these MS.

### **1. MS 1 – Safety**

The protection of life and limb for the work force is paramount. The company behavior ensures that individuals at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment, and the policies and procedures foster such a safety culture, and the attitudes and behaviors of individuals are consistent with the policies and procedures.

### **2. MS 2 - Organizational Structure and Responsibilities**

The organization with responsibility and accountability for establishing and implementing a maintenance strategy to support company objectives for reliable station operation is clearly defined, communicated, understood and is effectively implemented. Reporting relationships, control of resources, and individual authorities support and are clearly defined and commensurate with responsibilities.

### **3. MS 3 – Maintenance Management and Leadership**

Maintenance managers establish high standards of performance and align the maintenance organization to effectively implement and control maintenance activities.

### **4. MS 4 – Problem Resolution and Continuing Improvement**

The company values and fosters an environment of continuous improvement and timely and effective problem resolution.

### **5. MS 5 - Maintenance Personnel Knowledge and Skills**

Maintenance personnel are trained and qualified to possess and apply the knowledge and skills needed to perform maintenance activities that support safe and reliable plant operation.

### **6. MS 6 - Training Support**

A systematic approach to training is used to achieve, improve, and maintain a high level of personnel knowledge, skill, and performance.

**7. MS 7 – Balance of Maintenance Approach**

The maintenance program includes the proper balance of the various approaches to maintenance, e.g., preventive, predictive, or corrective. The approach is adequately documented with consideration of economics and reliability of equipment or components, and their affect on reliable operation of the unit. Operating experience is factored into the program. Maintenance procedures and documents should include the generation equipment and all those components owned by the generation owner directly connected to the plant that are an integral part of delivering power to the grid including fuel supply systems, electrical switchyards, transmissions lines, penstocks, flumes, exhaust system, etc.

**8. MS 8 – Maintenance Procedures and Documentation**

Maintenance procedures and documents are clear and technically accurate, provide appropriate direction, and are used to support safe and reliable plant operation. Procedures must be current to the actual methods being employed to accomplish the task and are comprehensive to ensure reliable energy delivery to the transmission grid.

**9. MS 9 – Conduct of Maintenance**

Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation.

**10. MS 10 – Work Management**

Work is identified and selected based on value to maintaining reliable plant operation. Work is planned, scheduled, coordinated, controlled, and supported with resources for safe, timely, and effective completion.

**11. MS 11 – Plant Status and Configuration**

Station activities are effectively managed so plant status and configuration are maintained to support reliable and efficient operation.

**12. MS 12 – Spare Parts, Material and Services**

Correct parts and materials in good condition, are available for maintenance activities to support both forced and planned outages. Procurement of services and materials for outages are performed in time to ensure materials will be available without impact to the schedule. Storage of parts and materials support maintaining quality and shelf life of parts and materials.

**13. MS 13 - Equipment Performance and Materiel Condition**

Equipment performance and materiel condition support reliable plant operation. This is achieved using a strategy that includes methods to anticipate, prevent, identify, and promptly resolve equipment performance problems and degradation.



**14. MS 14 – Engineering and Technical Support**

Engineering activities are conducted such that equipment performance supports reliable plant operation. Engineering provides the technical information necessary for the plant to be operated and maintained within the operating parameters defined by plant design.

**15. MS 15 – Chemistry Control**

Chemistry controls optimize chemistry conditions during all phases of plant operation and system non-operational periods.

**16. MS 16 – Regulatory Requirements**

Regulatory compliance is paramount in the operation of the generating asset. Each regulatory event is properly identified, reported and appropriate action taken to prevent recurrence.

**17. MS 17 – Equipment History**

Maintenance standards or procedures clearly define requirements for equipment history for the systems and equipment, including, what information or data to collect, how to record data, and how the data is to be used.

**18. MS 18 – Maintenance Facilities and Equipment**

Facilities and equipment are adequate to effectively support maintenance activities.

**(END OF APPENDIX D)**

## **APPENDIX E: OPERATION STANDARDS FOR GENERATING ASSET OWNERS**

Operating Standards (OS) 1 through 28 apply to each covered generating asset. (See GO 167, §§ 3 and 8.) A separate document containing recommended guidelines may be obtained from the Commission's Consumer Protection and Safety Division (or successor entity). (See GO 167 § 15.2.) The guidelines are intended to assist each generating asset owner determine how it may comply with these OS.

### **1. OS 1 - Safety**

The protection of life and limb for the work force is paramount. GAOs have a comprehensive safety program in place at each site. The company behavior ensures that personnel at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment and the policies and procedures foster such a safety culture, and the attitudes and behaviors of personnel are consistent with the policies and procedures.

### **2. OS 2 - Organizational Structure and Responsibilities**

The organization with responsibility and accountability for establishing and implementing an operation strategy to support company objectives for reliable plant operation is clearly defined, communicated, understood and is effectively implemented. Reporting relationships, control of resources, and individual authorities support and are clearly defined and commensurate with responsibilities.

### **3. OS 3 - Operations Management and Leadership**

Operations management establishes high standards of performance and aligns the operations organization to effectively implement and control operations activities.

### **4. OS 4 - Problem Resolution and Continuing Improvement**

The GAO values and fosters an environment of continuous improvement and timely and effective problem resolution.

### **5. OS 5 - Operations Personnel Knowledge and Skills**

Operations personnel are trained and qualified to possess and apply the knowledge and skills needed to perform operations activities that support safe and reliable plant operation.

### **6. OS 6 - Training Support**

A systematic approach to training is used to achieve, improve, and maintain a high level of personnel knowledge, skill, and performance. Each GAO provides a site-

specific training program including on-the-job training, covering operations, including reasonably anticipated abnormal and emergency operations. Personnel are trained commensurate with their duties.

#### **7. OS 7 - Operation Procedures and Documentation**

Operation procedures exist for critical systems and states of those systems necessary for the operation of the unit including startup, shutdown, normal operation, and reasonably anticipated abnormal and emergency conditions. Operation procedures and documents are clear and technically accurate, provide appropriate direction, and are used to support safe and reliable plant operation. Procedures are current to the actual methods being employed to accomplish the task and are comprehensive to ensure reliable energy delivery to the transmission grid.

#### **8. OS 8 - Plant Status and Configuration**

Station activities are effectively managed so plant status and configuration are maintained to support safe, reliable and efficient operation.

#### **9. OS 9 - Engineering and Technical Support**

Engineering activities are conducted such that equipment performance supports reliable plant operation. Engineering provides the technical information necessary for the plant to be operated and maintained within the operating parameters defined by plant design. Engineering provides support, when needed, to operations and maintenance groups to resolve operations and maintenance problems.

#### **OS 10 - Environmental Regulatory Requirements**

Environmental regulatory compliance is paramount in the operation of the generating asset. Each regulatory event is identified, reported and appropriate action taken to prevent recurrence.

#### **OS 11 - Operations Facilities, Tools and Equipment**

Facilities and equipment are adequate to effectively support operations activities.

#### **OS 12 - Operations Conduct**

To ensure safety, and optimize plant availability, the GAO conducts operations systematically, professionally, and in accordance with approved policies and procedures. The GAO takes responsibility for personnel actions, assigns personnel to tasks for which they are trained, and requires personnel to follow plant and operation procedures and instructions while taking responsibility for safety. Among other things:

- A. All personnel follow approved policies and procedures. Procedures are current, and include a course of action to be employed when an adopted procedure is found to be deficient.
- B. All operations are performed in a professional manner. Basic rules of conduct apply throughout the plant at all times.
- C. All personnel on-duty are trained, qualified, and capable of performing their job functions. Personnel are assigned only to duties for which they are properly trained and qualified.
- D. Personnel take immediate actions to prevent or correct unsafe situations.

### **13. OS 13 - Routine Inspections**

Routine inspections by plant personnel ensure that all areas and critical parameters of plant operations are continually monitored, equipment is operating normally, and that routine maintenance is being performed. Results of data collection and monitoring of parameters during routine inspections are utilized to identify and resolve problems, to improve plant operations, and to identify the need for maintenance. All personnel are trained in the routine inspections procedures relevant to their responsibilities. Among other things, the GAO creates, maintains, and implements routine inspections by:

- A. Identifying systems and components critical to system operation (such as those identified in the guidelines to Standard 28).
- B. Establishing procedures for routine inspections that define critical parameters of these systems, describe how those parameters are monitored, and delineate what action is taken when parameters meet alert or action levels.
- C. Training personnel to conduct routine inspections.
- D. Monitoring routine inspections.

### **OS 14 - Clearances**

Work is performed on equipment only when safe. When necessary, equipment is taken out of service, de-energized, controlled, and tagged in accordance with a clearance procedure. Personnel are trained in the clearance procedure and its use, and always verify that equipment is safe before any work proceeds. Among other things:

- A. The GAO prepares and maintains a clearance procedure. The clearance procedure contains requirements for removing a component from service and/or placing a component back into service.
- B. The GAO ensures that personnel are trained in and follow the clearance procedure.

### **15. OS 15 - Communications and Work Order Meetings**

The availability of the generating asset and safety of personnel is ensured during the execution of work orders by adequate communications and meetings, which may be scheduled or as needed, to review work plans with all affected personnel before work begins. Clear lines of communication exist between personnel responsible for operations, maintenance and engineering groups. Among other things:

- A. The GAO prepares and maintains a procedure for review of work plans through communications and work order meetings at the facility.
- B. Work is analyzed to determine what personnel, components, and systems are affected.
- C. Affected personnel meet before work begins to define the work, identify safety issues, to minimize the impact on plant operation, and to determine the need for further meetings.
- D. Personnel are trained in and follow the procedure.

### **16. OS 16 - Participation by Operations Personnel in Work Orders**

Operations personnel identify potential system and equipment problems and initiate work orders necessary to correct system or equipment problems that may inhibit or prevent plant operations. Operations personnel monitor the progress of work orders affecting operations to ensure timely completion and closeout of the work orders, so that the components and systems are returned to service. Among other things:

- A. Operations personnel identify problems requiring work orders, and initiate work orders to correct those problems
- B. The operations manager or other appropriate operating personnel periodically review work orders that affect operations to ensure timely completion and closeout of the work orders, so that components and systems are returned to service.
- C. Personnel responsible for prioritizing work orders consult operations personnel to assure that work orders affecting the operations of the plant are properly prioritized.
- D. Appropriate personnel are trained in and follow procedures applicable to work orders.

### **17. OS 17 - Records of Operation**

The GAO assures that data, reports and other records reasonably necessary for ensuring proper operation and monitoring of the generating asset are collected by trained personnel and retained for at least five years, and longer if appropriate.

### **18. OS 18 - Unit Performance Testing**

The GAO conducts periodic performance tests as appropriate to identify trends and possible improvements in unit operation. The GAO responds to test results with changes to equipment, policies, routines, or procedures necessary to maintaining unit availability and the unit's ability to support grid operations consistent with the Unit Plan.

### **19. OS 19 - Emergency Grid Operations**

The GAO prepares for conditions that may be reasonably anticipated to occur during periods of stress or shortage on the state's electric grid. During such periods of stress or shortage, the GAO makes operational decisions to maximize each unit's availability and ability to support grid operations. Among other things the GAO:

- A. Takes reasonable steps to maintain the ability to communicate with the Control Area Operator all times.
- B. In preparing for periods of stress or shortage, takes steps to clarify the regulatory requirements, such as emissions, water discharge temperature, etc., which will apply during emergencies.
- C. When emergencies appear imminent, seeks regulatory relief from those regulatory requirements that reduce output.
- D. Assists the Control Area Operator in responding to the various kinds of possible problems on the electrical grid, including restoration of service after a disturbance.
- E. When practical, during periods of stress or shortage, consults with the Control Area Operator before derating a unit or taking a unit off line and defers outages and derates at the Control Area Operator's request when continued operation is
  1. Possible and practical,
  2. Safe to plant personnel and to the public,
  3. In accordance with applicable law and regulations, and
  4. Will not cause major damage to the plant.

### **20. OS 20 - Preparedness for On-Site and Off-Site Emergencies**

The GAO plans for, prepares for, and responds to reasonably anticipated emergencies on and off the plant site, primarily to protect plant personnel and the public, and secondarily to minimize damage to maintain the reliability and availability of the plant. Among other things, the GAO:

- A. Plans for the continuity of management and communications during emergencies, both within and outside the plant,
- B. Trains personnel in the emergency plan periodically, and
- C. Ensures provision of emergency information and materials to personnel.

**21. OS 21 - Plant Security**

To ensure safe and continued operations, each GAO provides a prudent level of security for the plant, its personnel, operating information and communications, stepping up security measures when necessary.

**22. OS 22 - Readiness**

Until a change in a unit's long-term status, except during necessary maintenance or forced outages, the GAO is prepared to operate the unit at full available power if the Control Area Operator so requests, after reasonable notice, when such operation is permitted by law and regulation. Among other things, the GAO:

- A. Maintains contingency plans to secure necessary personnel, fuel, and supplies, and
- B. Prepares facilities for reasonably anticipated severe weather conditions.

**23. OS 23 - Notification of Changes in Long-Term Status of a Unit**

The GAO notifies the Commission and the Control Area Operator in writing at least 90 days prior to a change in the long-term status of a unit. The notification includes a description of the planned change.

**24. OS 24 - Approval of Changes in Long-Term Status of a Unit**

The GAO maintains a unit in readiness for service in conformance with Standard 22 unless the Commission, after consultation with the Control Area Operator, affirmatively declares that a generation facility is unneeded during a specified period of time. This standard is applicable only to the extent that the regulatory body with relevant ratemaking authority has instituted a mechanism to compensate the GAO for readiness services provided.

**25. OS 25 - Transfer of Ownership**

The GAO notifies the Commission and the Control Area Operator in writing at least 90 days prior to any change in ownership.

**26. OS 26 - Planning for Long-Term Unit Storage**

At least 90 days before a change in the long-term status of an electric generation unit, other than permanent shutdown and/or decommissioning, the GAO shall submit to the Commission plans and procedures for storage, reliable restart, and operation of the unit.

**27. OS 27 - Flow Assisted Corrosion**

Where circumstances require it, the GAO has a flow-assisted corrosion program, which identifies vulnerable equipment, provides for regular testing of that equipment, and responds appropriately to prevent high energy pipe failures.

**28. OS 28 - Equipment and Systems**

GAO complies with these Operation Standards (1-27) considering the design bases (as defined in the Appendix) of plant equipment and critical systems. The GAO considers the design basis of power plant equipment when as required by other standards it, among other things:

- A. Establishes procedures for the operation of critical systems at each unit (Ref. Standard No. 7).
- B. For each system, identifies critical parameters that require monitoring (Ref. Standard No. 8 and 13).
- C. For each critical parameter, establishes values at which to increase observation of the system or take actions to protect it (Ref. Standard No. 8 and 13).
- D. Assures that systems are monitored and actions are taken (Ref. Standard 8 and 13).
- E. Establishes parameters for operation during periods of stress or shortage on the state's electric grid (Ref. Standard No. 9 and 19).
- F. Assures that personnel operating critical systems are trained and qualified (Ref. Standard No. 6).



## **Appendix**

### **A. Definitions**

Design Basis Documents – Vendor and engineering documents used in the design, or used to instruct in the correct operation and maintenance, of the systems and equipment used in the power plant. Design basis documents consist of OEM Manuals, vendor documents, industry standards, codes and documented engineering assessments.

Documented deviations from the above documents are also considered part of the design basis documents provided there is documented reasoning for those deviations. Documented reasoning includes the benefit of the deviation and why the deviation is consistent with the Unit Plan.

### **B. Industry Codes Standards and Organizations**

ASME Boiler and pressure vessel code, Section 1, (including all amendments)

ASME Boiler and pressure vessel code, Section V111

ANSI/ASME B 31.1 Power Piping

Note on Codes: Any boiler designed and approved to an earlier issue and amendment of these standards is maintained and repaired to the design as originally issued. However, advances in engineering knowledge and experience reflected in the subsequent issues of the codes are taken into consideration in operation and maintenance of the boiler.

Weld repairs and alterations of boilers designed to ASME Boiler and Pressure Vessel Code, Section 1, is carried out in accordance with the rules of the National Board Inspection Code, published by the National Board of Boiler and Pressure Vessel Inspectors.

These standards are intended to augment and not conflict with other standards, which are pertinent to specific components and systems at each facility such as standards issued by organizations including but not limited to:

A& WMA	Air & Waste Management Association
AAQS	Ambient Air Quality Standard
ABMA	American Boiler Manufacturer's Association
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
APCD	Air Pollution Control District
API	American Petroleum Institute
ARB	Air Resources Board (see CARB)
ASME	American Society of Mechanical Engineers

ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWS	American Welding Society
CAISO	California Independent System Operator
CAL OSHA	California Occupational Safety and Health Administration
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CPUC	California Public Utilities Commission
CEC	California Energy Commission
CCR	California Code of Regulations
CSA	Canadian Standards Association
EPA	Environmental Protection Administration
GAO	Generating Asset Owner
HEI	Heat Exchange Institute
HI	Hydraulic Institute
IEEE	Institute of Electrical and Electronics Engineers
ISA	The Instrumentation, Systems, and Automation Society
NEC	National Electrical Code
NERC ES-IC	North American Reliability Council Information Sharing and Analysis Center
NEMA	National Electrical Manufacturer's Association
NIPC	National Infrastructure Protection Center
NFPA	National Fire Protection Association
NRTL	Nationally Recognized Testing Laboratories
OSHA	Occupational Safety and Health Administration
PFI	Pipe Fabrication Institute
SSPC	Steel Structures Painting Council
TEMA	Tubular Exchanger Manufacturer's Association
UBC	Uniform Building Code
UL	Underwriters' Laboratories
UPC	Uniform Plumbing Code

**C. Summary of Abbreviations and Acronyms**

ACC	Air-Cooled Condenser
AODTM	A trademark of Environmental Elements Corporation for a urea to ammonia system
AVG, avg	Average
BACT	Best Available Control Technology
BMS	Burner Management System
BTA	Best Technology Available
BTU, Btu	British Thermal Unit
BCW	Bearing Cooling Water
CA	California
CAM	Compliance Assurance Monitoring
CEM, CEMS	Continuous Emissions Monitoring System (also referred to as CEMs)
CFR	Code of Federal Regulations
CO <sub>2</sub>	Carbon Dioxide
CO	Carbon Monoxide
CT	Combustion turbine
CTM	Conditional Test Method
CWP, CWS	Circulating Water Pump, Circulating Water System
DC	Direct Current
DLN	Dry Low-Nox
EOH	Equivalent Operating Hour
°F	Degree Fahrenheit
ft <sup>3</sup>	Cubic Feet
GAO	Generation Asset Owner
gpm	Gallons per minute
H <sub>2</sub> SO <sub>4</sub>	Sulfuric Acid
HAP	Hazardous Air Pollutant
HHV	High Heating Value

Hp	Horsepower
HR, hr	Hour
Inj	Injection
kWe	Kilowatt electrical
LAER	Lowest Achievable Emission Rate
LEC	Low Emission Combustor
LB, LBs, lbs	Pound, Pounds
MACT	Maximum Achievable Control Technology
MMBtu	Million British Thermal Units
MW	Megawatt
MWe	Megawatt electrical
MWh	Megawatt-hour
NH <sub>3</sub>	Ammonia
Nm	Nanometer
NO	Nitric Oxide
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Oxides of Nitrogen or Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
O&M	Operation & Maintenance
O <sub>2</sub>	Oxygen
OEM	Original Equipment Manufacturer
PM <sub>10</sub> , PM <sub>10</sub>	Particulate Matter (10 microns or less)
PM <sub>2.5</sub> or PM <sub>2.5</sub>	Particulate Matter (2.5 microns or less)
PM	Particulate Matter
Ppm	Parts per Million
ppmvd	Parts per Million by Volume, Dry
PSD	Prevention of Significant Deterioration
QA/QC	Quality Assurance/Quality Control
RATA	Relative Accuracy Test Audit

RMP	Risk Management Plan
S/S	Startup and Shutdown
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SO <sub>2</sub>	Sulfur Dioxide
SOTA	State-of-the-Art
SO <sub>x</sub>	Sulfur Oxides
TDS	Total Dissolved Solids
UPS	Uninterruptible Power Supply
UV	Ultraviolet
VOC	Volatile Organic Compound
Yr	Year
ZAT	Zero Ammonia Technology

**(END OF APPENDIX E)**

## APPENDIX F: FINES FOR SPECIFIED VIOLATIONS

Violation	Fine
1. Failure to file a formal document at the time or in the manner required by this General Order. These documents are Initial Certification, Recertification, Notice of Material Change, Maintenance Plan Summary, Operation Plan Summary, Update to Maintenance Plan Summary, and Update to Operation Plan Summary.	\$1,000 per incident <i>plus</i> \$500 per day for the first ten calendar days the filing was late and \$500 for each day thereafter.
2. Failure to maintain specific documents as required by this General Order. These documents are Maintenance Plan, Operation Plan, Logbook (Thermal), and Logbook (Hydroelectric).	\$5,000 per incident.
3. Failure to respond to an Information Requirement set forth in Section 10.0 of this General Order.	\$1,000 per incident <i>plus</i> \$500 per day for the first ten calendar days the Information Requirement was not satisfied after being requested and \$1,000 for each day thereafter.
4. Negligent submission of inaccurate information in response to an information request under Section 10.0 of this General Order.	\$2,000 per incident <i>plus</i> \$500 per day for the first ten days the inaccuracy was not corrected and \$1,000 for each day thereafter.
5. Repeated violation of any requirement listed in this schedule.	200% of the fine that would be imposed for a first-time violation.

**(END OF APPENDIX F)**

**END OF GENERAL ORDER**